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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,086	02/15/2002	John Mark Royle	87288.1620	8484

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EXAMINER

AZAD, ABUL K

ART UNIT PAPER NUMBER

2654

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,086

Applicant(s)

ROYLE ET AL.

Examiner

ABUL K. AZAD

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/04/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 are pending in this Office Action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6-8, 10-17 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Wegner (US 4,048,654).

As per claim 1, Wegner teaches, “a method for digitally generating sound from phase and amplitude information of a narrow bandwidth signal”, comprising the steps of:

“(1) receiving said amplitude information and said phase information of said narrow bandwidth signal” (Fig. 8, elements 51 and 52);

“(2) determining phase-derivative information from said phase information” (col. 7, lines 37-49);

“(3) applying frequency gain to said phase-derivative information” (Fig. 8, element AGC);

“(4) summing results of step (3) with an audio wave carrier having an audio band frequency, and outputting control information that includes said results of step (3) imparted to said audio wave carrier” (Fig. 8, element 72);

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“(5) controlling an oscillator with said control information, wherein said oscillator outputs frequency modulation information that varies with respect to said phase-derivative information”(Fig. 7, element 64); and

“(6) converting, at an output sample rate that is higher than said audio band frequency, said amplitude information and said frequency modulation information to an analog amplitude/frequency modulated speaker control signal” (col. 7, lines 50-66).

As per claim 2, Wegner teaches, “wherein said amplitude information and said phase information have an input sample rate that is lower than said audio band frequency, wherein step (3) comprises up-sampling said phase-derivative information to said output sample rate and applying said frequency gain to said up-sampled phase-derivative information, the method further comprising: (7) up-sampling said amplitude information to said output sample rate prior to step (6)” (Figures 3 and 5).

As per claim 3, Wegner teaches, “wherein step (7) further comprises filtering components of said input sample rate from said up-sampled amplitude information” (col. 7, lines 50-66).

As per claim 6, Wegner teaches, “wherein step (3) comprises delaying said phase-derivative information to maintain coherence with said filtering” (Fig. 7).

As per claim 7, Wagner teaches, “further comprising scaling said amplitude information to system gain” (col. 7, lines 20-26).

As per claim 8, Wagner teaches, “further comprising scaling said phase-derivative information to system gain” (col. 7, lines 20-26).

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As per claim 10, Wagner teaches, "wherein said amplitude information and said phase information have an input sample rate that is substantially equal to said output sample rate" (col. 7, lines 50-66).

As per claim 11, Wagner teaches, "further comprising scaling said amplitude information to system gain" (col. 7, lines 20-26).

As per claim 12, Wagner teaches, "further comprising scaling said phase-derivative information to system gain" (col. 7, lines 20-26).

As per claims 13-17 and 19-20, they are interpreted and thus rejected for the same reasons set forth in the rejection of claims 1-3.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wegner (US 4,048,654) as applied to claim 3 above, and further in view of Rotpla-Pukkila et al. (US 6,732,070).

As per claim 4 and 5, Wegner does not explicitly teaches, "wherein said filtering comprises performing an interpolation operation on said up-sampled amplitude information and wherein said filtering comprises a two- step sinc low pass filter interpolation operation". However, Rotpla-Pukkila teaches, "wherein said filtering

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comprises performing an interpolation operation on said up-sampled amplitude information and wherein said filtering comprises a two- step sinc low pass filter interpolation operation" (col. 11, lines 29-43). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use teaching of interpolation in the invention of Wagner because one ordinary skill in the art would readily recognize that provide a better quality wideband signal output.

6. Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wegner (US 4,048,654)..

As per claims Wegner does not explicitly teach, "wherein said input sample rate is approximately 200 Hz, said output sample rate is approximately 48.8kHz, and said audio band frequency is approximately centered around 680 Hz". Wegner teaches band frequency centered around 38 kHz, and sampling rate is 50 Hz to 15 kHz. (col. 6, lines 34-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use input sample rate is approximately 200 Hz, said output sample rate is approximately 48.8kHz, and said audio band frequency is approximately centered around 680 Hz because the choice of the sampling rate is routine experimentation and optimization in the absence of criticality.

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Contact information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABUL K. AZAD whose telephone number is (571) 272-7599. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHEMOND DORVIL can be reached on (571) 272-7602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Handwritten signature of Abul K. Azad and the date 8/07/05.

ABUL K. AZAD
Primary Examiner
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